

# PATENT COOPERATION TREATY

Translation

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See Form PCT/ISA/210 (sheet 2)**

Applicant's or agent's file reference

**3457 KL PC 01**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/DE2004/002252**

International filing date (day/month/year)

**11.10.2004**

Priority date (day/month/year)

**11.10.2003**

International Patent Classification (IPC) or both national classification and IPC

**B29C65/06, B23K20/10, B23K20/12**

Applicant

**KLN ULTRASCHALL GMBH**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/DE2004/002252

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2, 3	YES
	Claims	1, 4-12	NO
Inventive step (IS)	Claims	2, 3	YES
	Claims	1, 4-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

2. Citations and explanations:

1 This report makes reference to the following documents:

D1: US 2002/017883 A1 (MARCINKIEWICZ JOSEPH G *ET AL.*) 14 February 2002 (2002-02-14)

D2: WO 02/076737 A (FORWARD TECHNOLOGY INDUSTRIES, INC) 3 October 2002 (2002-10-03)

2 INDEPENDENT CLAIM 1

2.1 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 is not novel within the meaning of PCT Article 33(2).

Document D1 discloses (the references between parentheses relate to this document) a

Method for friction welding, in which one of the parts to be connected is caused to oscillate by means of an electromagnetic oscillator, and in which case the oscillator is electrically braked after controlled start of oscillation (see figure 12b) and a predeterminable oscillation time.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

4 DEPENDENT CLAIMS 5-12

Claims 5-12 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty.

4.1 Claim 6: The features of the dependent claim 6 attempt to define the arrangement by method features for use of the arrangement. Since the arrangement disclosed in D1 can be operated as proposed in claim 6, these features cannot distinguish the claimed arrangement from the prior art. D1 thus discloses all of the features of this claim.

4.2 Claims 5, 7-12: D1 discloses all of the features of these claims (see the passages cited in the search report).

5 DEPENDENT CLAIMS 2, 3

The feature combination contained in the dependent claim 2 is neither known nor obvious from the available prior art. The reasons for this are as follows:

5.1 The document D1, which is regarded as the closest prior art, discloses a method from which the subject matter of claim 2 differs in that current flows through an electromagnet, which constrains the respective movement, during braking, and the current flow is switched off on reaching a predetermined oscillation amplitude during the braking process.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

The subject matter of claim 2 is thus novel (PCT Article 33(2)).

- 5.3 The problem addressed by the present invention can therefore be considered that of ending the vibration that is required for heat generation as soon as possible after the joining process.

Since the solution proposed in claim 2 of the present application for this object is not obvious from the prior art, claim 2 involves an inventive step (PCT Article 33(3)).

- 5.4 Claim 3 is dependent on claim 2, and thus likewise satisfies the PCT requirements for novelty and inventive step.

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

Since the welding time is restricted in all friction welding methods, D1 implicitly discloses that the oscillation time is predetermined. The manner of control (see paragraphs 51-54) results in electrical braking of the oscillator. D1 thus discloses all of the features of claim 1.

3 INDEPENDENT CLAIM 4

3.1 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 4 is not novel within the meaning of PCT Article 33(2).

Document D2 discloses (the references between parentheses relate to this document) an

Arrangement for friction welding, in which an oscillator is provided, by means of which one of the parts ("load") to be connected is caused to oscillate and which is driven by electromagnets (42, 44) acting in opposite senses, in which case

the output of a motion sensor (52, 56) which records the respective position of the oscillator is connected to one input of a regulator (76), whose output side is connected to inputs of a power output stage (78, 80) for the current flow to the electromagnets (42, 44).

D2 thus discloses all of the features of claim 4. D1 likewise discloses all of the features of claim 4.

WRITTEN OPINION OF THE  
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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 3457 KL PC 01	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/DE2004/002252	International filing date ( <i>day/month/year</i> ) 11 October 2004 (11.10.2004)	Priority date ( <i>day/month/year</i> ) 11 October 2003 (11.10.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KLN ULTRASCHALL GMBH			

- This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
- This REPORT consists of a total of 7 sheets, including this cover sheet.  
  
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

- This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

- The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70		Date of issuance of this report 27 July 2006 (27.07.2006)  Authorized officer  <b>Agnes Wittmann-Regis</b>  e-mail: pt06@wipo.int
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